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Impacts and Constraints of Universal Coverage in Thailand's Public Health: A Survey Study in the Northeast Region

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Abstract

This paper assesses impacts and constraints of the implementation of universal coverage (UC) in Thailand's public health system so far in selected provinces of the northeast region. Based on incidence and findings discovered in the survey, we can draw out a depiction to explain linkages and systematic consequences of the situations from the Primary Care Units (PCUs) to secondary and tertiary level hospitals. The depiction simply describes the current situation and the impact of UC on the whole system of care provisions with specific constraints at each facility level, and illustrates the systematically negative cyclic consequences of those constraints. Due to the "primary constraints" at all facility levels—mainly because of a shortage of health workers and inadequate budget financing—the Sarng-Nam-Sorm (health promotion and disease prevention ahead of curative health care) and Klai-Baan-Klai-Jai (Health facility near dwelling) strategies of the UC policy face failures at the PCU level, which, as a result, do not reduce, but rather increase number of the patients at the hospital level. Unbearable workloads and poor equipment with a lack of specific needed professionals at most secondary level hospitals at the district level has tended to push them to more often refer inpatient cases to tertiary level hospitals in the provincial cities because it is better and safer for patients. This is often viewed by the tertiary level hospital as over-referral, and puts a tremendous burden on them in terms of physical workloads and financial cost. In this study, we explained that these impacts from facilities in lower levels to those at higher levels are "linking consequences," which will eventually negatively result backward on the lower level facilities in terms of "secondary constraints." In the long run, if no attempt is made to ease the constraints and improve the situation—mainly regarding the inadequacy of the health workforce and funding—this vicious cycle of negative consequences could collapse the whole public health care system and UC.

Keywords: Thailand, universal coverage, public health, health care, health insurance

I Introduction

To accomplish sustainable health financing and an efficient service delivery system, Thailand's universal coverage (UC) policy, which was adopted in 2001, incorporated financial reforms with a closed-end provider payment method and strengthened the

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primary care network with more attention on health promotion and disease prevention works (PP).

An annual per capita health budget inclusive of healthcare workers' salaries—the capitation rate—was adopted in financing health services from contracted service providers, hospitals and their networks, nationwide. This has affected hospitals' revenues and expenditure, especially that of public hospitals of the Ministry of Public Health (MOPH), as the UC budget on the capitation basis has replaced and reduced major incomes of the hospitals from patient payments of those who were not insured during the pre-UC period. Due to persisting inequitable distributions of public health personnel across the country, affections of the salary inclusive capitation vary in public hospitals from region to region. This was determined by the regulation of salary subtractions from the capitation budget, whether the salary of health workers was subtracted and allocated at the provincial level or at the national level.

In the beginning years of the UC implementation, a single capitation was allocated equally to provinces with aims to achieve equity of financing based on the size of the population being taken care of by hospitals in each province. Salary and allowances for health workers were inclusive and allocated at the provincial level.

This created financial disruptions in hospitals of affluent provinces, especially in the central region, having a (too) high ratio of health personnel to the population, while creating financial surplus in hospitals with a (too) low health personnel to population ratio in peripheral provinces, especially in the northeast region.[1)]

The single capitation rate was massively opposed by providers and hospitals, mainly in the central region, who were facing financial difficulties as the capitation budget after salary subtraction was inadequate to cover the operational costs of service provision at the hospitals. Supported by "conservative" academics at the MOPH who disagreed with "the reformist" idea that re-distributions of health personnel could be achieved through the financing mechanisms, from FY 2003 on, the capitation budget was allocated to provinces after salary subtraction at the national level to undermine resistance and avoid possible conflicts from affected hospitals [Na-Ranong *et al*. 2004].

The decision was strongly opposed by some groups of health professionals and providers, including the Rural Doctor Society (RDS), which criticised that inequality gaps

1) The number of health personnel in total in Thailand is considered still inadequate compared to the total population. The equal single capitation rate with salary subtraction at the provincial level was proposed in financing contracted public hospitals with UC to re-distribute health personnel which were bunching in the central region and provincial cities more to the needed regions and distant areas. In this way, the amount of budget allocated to a hospital would be based on the population figure under the hospital's responsibility. Those in distant areas and in shortage of health personnel but taking care of a large population would be empowered to hire additional workers and attract more health personnel from the cities.

across regions and provinces would be widened with an unfair amount of health budget allocated on this basis. Differing gaps of the total UC budget, after including the salary allocated at the national level, across the provinces would be as high as 4.26 times ranging from 820 baht to 3,492 baht/head/year [Watcharanukulkiat cited in Mohanamai website 2005].

Regarding the operational policy of UC, Sarng-Nam-Sorm (SNS: health promotion and disease prevention (PP) ahead of curative health care) and Klai-Barn-Klai-Jai (KBKJ: health facility near dwelling) strategic plans were promoted to campaign for the good health of the Thai people in the long run to save costs of curative care, and improve accessibility to health care by those who fall sick. A concept of Primary Care Unit (PCU) to be as a gatekeeper providing health PP services and primary care to patients in the local area, screening those who need higher level of care and transferring them to the hospital via the referral networks was presented and empirically adopted.

Under this context, public hospitals of the MOPH in all districts across the country are contracted with the 30 Baht Scheme in the structure as a Contracted Unit for Primary Care (CUP), which are compulsorily required to have at least one PCU for every 10,000 residents in their area of responsibility. Except the districts in Bangkok, a CUP is generally spoken to be a primary care network taking care of residents in one district territory. In municipal areas and provincial cities, new PCUs were set up as a unit within the hospital or a separate unit out of the hospital, while in the rural or peripheral areas, they were mostly upgraded and re-branded from existing Health Centers (HCs).

Under the CUP structure, PCUs and HCs are supposed to have at least one nurse working to provide primary care service and get support from the hospital in terms of technical advice and rotations of the medical team with doctors and other professionals to provide specific curative care periodically. The main tasks of the permanent staff at PCUs/HCs—mainly Public Health Officers (PHOs), health academics and public health management officers (or the PCU/HC's head)—are more focused on health PP works in the local communities with the 70: 30 work task ratio of PP and curative works.

The UC budget to PCUs/HCs was switched from a top-down basis of public health structure to be on a capitation basis via the inclusive budget to the CUP, plus fixed cost allowances from the Provincial Public Health Office (PPHO). On the line of public command in the district, the District Public Health Office (DPHO) acts as an evaluating and monitoring agent of PCUs and HCs' performances. Simply, the structure of a CUP under the MOPH is presented in Fig. 1.

These changes, both of the financing and of the structural reforms of health service delivery, have affected providers in many ways from managing staff to health practitioners.

In this study, the opinions and views of health service providers in Khonkaen and Kalasin provinces will be assessed and presented regarding the impact of the UC implementation in a variety of issues with attempts to figure out at the operating level

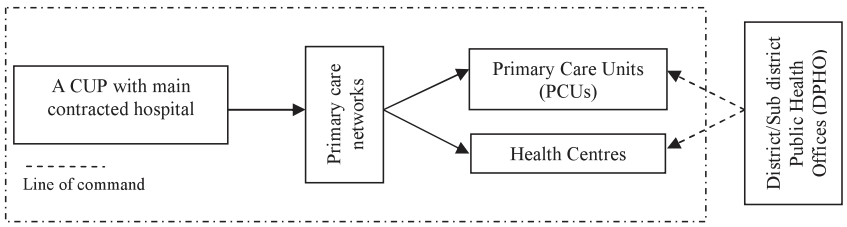

Fig. 1　CUP Structure and Main Constituent Parts

(aside from policy designing level) what are the difficulties and constraints they have been facing since, or even before, the financing and structural reforms of the UC implementation.

In the next section, overviews of the field surveys are given, detailed scope of the interview issues and basic information about the two provinces and the respondent groups, by professions and workplaces. Then, in section III, a summary of the opinions and views of the health service providers is presented by regarding interview issues. Section IV and V describe the difficulties and consequences of UC's financing reforms and health worker shortages at public health facilities, which are perceived as significant constraints on service provisions by the providers. Concluding remarks on systematic constraints and cyclic consequences of the problems in the public health service delivery system are, lastly, given in section VI.

II　Overview of the Field Surveys: Interviews of Health Care and Service Providers in Khonkaen and Kalasin Provinces

For the investigations, the northeast region was selected because it is the region hosting the largest number of population who are comparatively poorer than those in other regions and are equipped and provided with public health resources to the least advantage. Population ratios to health personnel and hospital beds are the highest in this region, nearly two times the national figures. The region is tentatively the most affected by the switching of salary subtraction of the capitation budget from the provincial level to the national level, which favours much better the affluent provinces in the central region. Differences of the total capitation amount to the provinces in the central region and the northeast region have been a large discrepancy since then, and the inequitable distribution of health personnel across the regions is left unsolved.

The field surveys were conducted during July–August 2005 and January–February 2006 in Khonkaen and Kalasin provinces. Both provinces are located in the upper part of the region, 445 km and 519 km from Bangkok, the national capital city, respectively.

By the population size (1.56 million) and location in the heart of the region, Khonkaen

is not only a commercial and political centre but also a hub of health care services and education. The province hosts a regional level hospital—Khonkaen Regional Hospital—and a university hospital of the largest university in the region—Srinakarin Hospital, Khonkaen University. The province is subdivided into 20 districts and 3 minor districts, having provincial borders with 9 neighbouring provinces including Kalasin in the east.

Kalasin is a medium-size province with 0.91 million population, further from Bangkok, located about 77 km from Khonkaen. The largest hospital in the provincial city—Kalasin Hospital—is a general level hospital, capable of providing only primary and secondary care service. For more sophisticated treatment needing advanced tertiary care level, the patients are referred to regional level hospital in Khonkaen—either Khonkaen Hospital or Srinakarin Hospital.

In accord with the regional referral network of the hospitals of the MOPH, Khonkaen Hospital is a regional level hospital which receives referred cases of patients who need upper-secondary and tertiary care from general level hospitals and community hospitals both in Khonkaen and neighbouring provinces.

Hospitals that have a referral network with Khonkaen Hospital include Kalasin Hospital, and all the community hospitals in Khonkaen and Kalasin. Patients from a community hospital in Kalasin are at first referred to Kalasin Hospital, then, only cases that need a higher level of care than Kalasin Hospital's capacity to provide will be transferred across the province to Khonkaen Hospital. The referral is basically required to proceed in order from the sub-districts to the district level, from districts to the provincial level, and from provinces to the regional level. In other words, the networks are in order from PCUs/HCs to a community hospital,[2] from community hospitals to a general hospital and general hospitals to a regional hospital. A diagram simply depicting the network between Khonkaen and Kalasin is given in Fig. 2.

In the field surveys, interviews were conducted with a health academic at a PPHO of each province, to find out basic information regarding the current situation of the UC operation and health service delivery system in the province, and with health practitioners at hospitals and PCUs/HCs, including doctors, nurses, Public Health Officers (PHOs), management officers, and the director, in 5 and 4 districts (or CUPs) of Khonkaen and Kalasin, respectively.

In Khonkaen, the districts visited were Mueng (provincial city), Namphong, Khaosuankwang, Chonnabot and Waengnoi. In Kalasin, the districts visited were Mueng (provincial city), Hueymek, Sahatsakhan and Kuchinarai. At each district, the community hospital (or the general/regional hospital in Mueng district), PCUs/HCs and the DPHO were visited for the interview sessions. Number of total interview respondents are 59, of which 34 are in Khonkaen and 25 are in Kalasin. By profession, the respondents consisted

2) An exception is Mueng (provincial city) district where PCUs or HCs directly refer the cases to general or regional hospitals in the province where they are contracted as Mueng CUP.

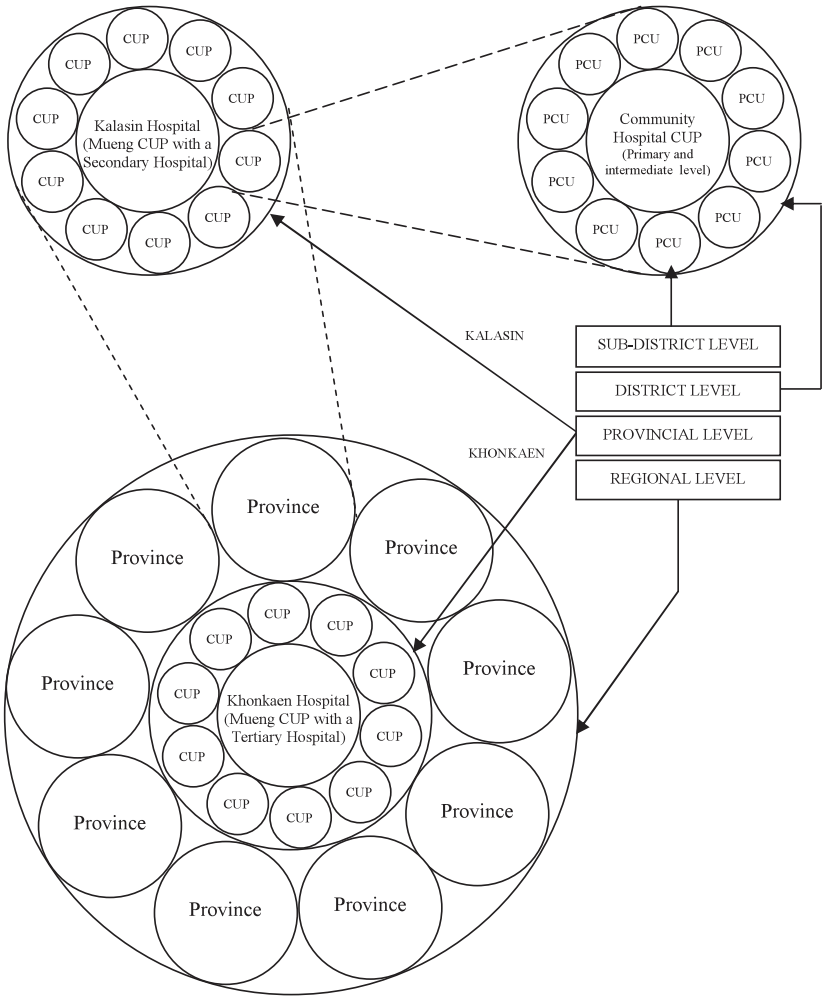

Fig. 2　Medical Care and Referral Networks: District, Provincial and Regional Levels

of 15 doctors (including the director of the hospitals who all are doctors as required by MOPH's regulation), 18 nurses, and 26 PHOs, health academics and management officers (health academics and management officers will be generally referred to as a PHO group later on, as both of the groups were upgraded from PHO).

During the interview, each respondent was asked for his/her opinions and suggestions toward a variety of issues, with related sub-topics. All were mainly about the impacts of the UC implementation and the situation of the health service delivery system in the province.

III Providers' Views of the UC Implementation

1. *Impressions*

Generally, the providers agree with the concept of the 30 Baht Scheme[3] and goodwill of the government in implementing UC. Budget management and allocation are seen as being more flexible than before, which was a top-down basis along the public command line, and more clearly defined with concrete strategies, policies and expected outcomes to the providers. However, the implementation in practice was criticized or being carried out without a good planning and preparations. The un-readiness and difficulties on the providers in the beginning years are summarized briefly as follows:

a) The database of the population eligible to the 30 Baht Scheme, and costs of health service provisions were not properly developed. This affected the calculation and allocation of the UC capitation budget, which were based on the number of population in each area. Using lagged information of health care unit costs and census registration, the capitation rates calculated was later on found to be inadequate to cover the actual costs of service provisions at health facilities.

b) The health service delivery system and health workers were not prepared to the changes. The structure of public health organization—PPHO, DPHO, hospitals and PCUs/HCs—were not yet properly reorganized and a lot of confusion regarding the UC policies and regulations were expressed by the providers. The regulations, especially of budget allocation to facilities, were remarked to have been adjusted very often in the beginning years.

c) The adoption of UC and the 30 Baht Scheme were over-exploited for political benefits and popularity by the government. It was over-advertised to the Thai people and misled them to highly expect and depend too much on the public health service system. In spite of many troubles of the scheme, any adjustments for better appropriateness were hardly done if that affected and lowered the popularity of the scheme among the people. The government did not inform the population about the whole truth about the limitations of budget and health benefits that the scheme could afford to provide to the public. Furthermore, the Thai patients were not well-educated about how to utilize the care system. Most of the patients, even with minor illness, often directly went to a hospital rather

3) The newly introduced medical scheme with universal coverage to cover those who were not receiving health benefits from the two existing public medical schemes—the Civil Servant Medical Benefit Scheme (CSMBS) and the Social Security Scheme (SSS). The covered population by this scheme are enabled to access health care at the registered health facilities for only a 30 baht (about 0.75 US dollar) co-payment with each use. The scheme is a taxation-based financing system.

than a PCU/HC. This increased significantly the number of patients at hospitals throughout the provinces, which contradicted to the policy's strategy of a primary care network.

2．*Work Impacts on the Providers*

According to the national figure of care utilization rates and number of patients at the MOPH's public hospitals in Tables 1 and 2, respectively, health care seeking behaviors of Thai patients are found to change during the period from 1999 to 2005 (before and after the UC implementation).

Patients who needed medical care, either OP or IP care, visited proportionately more facilities of the primary and lower-secondary level—PCUs/HCs and community hospitals—and, consequently, visited fewer facilities of the upper-secondary and tertiary level—general/regional hospitals, university hospitals and public hospitals of other ministries—in 2005 compared to in 1999.

Table 1　Patterns of Health Care Utilization : 1999, 2001, 2003 and 2005　(%)

Types of Treatment of the Last Time of Illness	Outpatient Care (OP)				Inpatient Care (IP)			
	1999	2003	2005	% change (1999 and 2005)	2001	2003	2005	% change (2001 and 2005)
Self-medication (drug store)	20.2	19.9	19.9	− 1.4				
PCUs/HCs	19.2	22.2	24.1	25.3				
Community Hospitals	14.9	19.8	17.9	20.3	26.4	47.1	41.4	56.9
General/Center Hospitals		6.6	7.1			26.2	33.3	
University Hospitals	15.6	0.6	1.2	− 34.6	58.9	1.6	3.8	− 26.1
Other public hospitals		3.7	1.9			9.6	6.4	
Private clinics/polyclinics	19.0	13.3	15.4	− 19.0	NA	1.2	1.0	NA
Private hospitals	4.8	4.6	4.8	− 0.7	14.2	14.0	13.8	− 2.8
Others	6.3	9.3	7.7	22.2	0.5	0.2	0.3	− 10.5
Total	100	100	100		100	100	100	

Source: [Thailand, NSO 1999; 2003; 2005]

Table 2　Number of Patients in Public Hospitals of the MOPH Nationwide: 1999, 2003 and 2005*

Years	Numbers of Patient		Rates of Patient	
	OP care	IP care	OP care (of 1,000 population)	IP care (of 1,000 population)
1999	91,889,048	4,663,946	78.80	111.99
2003	103,281,854	6,220,845	87.86	148.17
2005	106,251,652	7,749,734	89.47	182.73
% change (1999 and 2005)	+ 15.63%	+ 66.16%	+ 13.55%	+ 63.17%

Source: [Thailand, MOPH 2006]

*Excluding Bangkok metropolitan.

However, this does not imply that the number of patients at upper-secondary or tertiary hospitals would decrease. As indicated in Table 2, the number of patients at public hospitals of the MOPH in total increased significantly during this period, especially in-patient numbers which rose as high as 66 percent from the number in 1999. More than 55 percent of the patients were admitted for IP care at upper-secondary and tertiary hospitals (Table 1).

From the field surveys, the numbers of patients visiting for either OP or IP care were reported higher at nearly all facilities after the UC implementation. Situations with opinions of the providers toward the increased utilization rates were variously remarked.

For OP care, the utilizations at both PCUs/HCs and hospitals reportedly increased significantly. For example, at a HC in Huaymek district, the number of patients increased from 400 to 1,000 cases per month. At Khonkean Hospital, the number was informed to increase from 1,200–1,300 cases to 2,000 cases per day, while at Waengnoi Hospital, the cases doubled.

Most providers at the PCU/HC level reported that patients could really access care more easily with the 30 Baht Card. However, especially those having the card with "Thor" who were exempted from the 30 baht co-payment, sometimes over-utilized the care by going to PCU/HC just to ask for medicine to keep spare at home. In some cases, obliged to co-pay 30 baht per visit, patients were over-demanding medicine and treatments which were not really needed just to satisfy themselves that they had received the value of the co-payment they had paid. From a more optimistic point of view, some providers did not see this situation as a problem but as a good sign that people, even in the rural areas, are currently more concerned about their health and were less frequently buying drugs by themselves from local drug stores, some of which do not have a certificate or license from the public health agencies. In addition, this was seen as a good opportunity for providers at PCUs/HCs to know better the behavior of people in the community, which would help them to conduct PP works to change the adverse health behaviors of people in the long-run more efficiently.

At hospitals, the providers—doctors and nurses—viewed the increased OP cases in the hospital as, in some aspects, over-utilizing behaviors and the failures of KBKJ and SNS strategies of the UC policy. According to the strategies, patients who needed OP care were supposed to visit a PCU/HC near their dwelling and later be referred to the hospital by the PCU/HC if a higher level of care was needed. In this regard, the number of OPs at the hospital was supposed to decrease if the strategies were successfully accomplished and the hospital would be able to concentrate better on IP care provision. Because of a shortage of health workers—both in Khonkaen and Kalasin—and an inadequate UC budget to the CUP, the hospital could not support the allocation of nurses and rotations of medical team to PCU/HC networks. Capacity in providing primary care and PP service to the local people of PCU/HC was then limited in the same CUP. Trust in the quality of care provided at the PCU/HC level are also worse in the views of people and

this pushes them to come directly to the hospital for OP care, especially those residing near to or in easy access of the hospital.

Regarding the problems of care over-utilization and over-demanding patients, some respondents expressed that it was the government's mistake in over-advertising the 30 Baht Scheme and at the same time not informing the whole truth to people about the limitations of public capacity in providing health benefits. This causes people to over-expect and depend too much on public assistance. People's attitudes need to be adjusted to see more importance of self-care and health promotion.

For IP care, even if the number of cases was higher at the hospital level, most of the patients that were diagnosed by doctors really needed the care. However, at Khonkaen and Kalasin hospitals, referred cases for IP care from community hospitals both in the same and neighboring provinces increased massively.

Most of providers at the PCU/HC level expressed not many changes in their work patterns. However, work tasks, especially PP service provisions, were required to be of higher quality and were strictly evaluated with intensive-indicators by the MOPH. Many PP works were rushed to finish in a short time but supplied with limited budget and staff. Newly constructed population databases (so-called "family folders") and software were also still problematic and not familiar to the providers. With higher requirements on quality and more expectation from both patients and the government, according to the SNS and KBKJ strategies, insufficiencies in the number of staff and budget have hugely increased workloads at the PCU/HC level.

At community hospitals, respondents reported higher workloads in terms of care quality improvements accelerated by higher expectations of patients. The lack of practitioners (doctors, nurses, etc.) was seen as the factor driving workloads and deteriorating the quality of care provided, which consequently brought a higher risk of malpractice and stress to the practitioners.

At Khonkaen and Kalasin Hospitals, higher workloads were also perceived by the providers but mostly from the larger number of referred IP cases from community hospitals. The vice director of Kalasin Hospital claimed that even if, based on the Geographical Information System (GIS), the hospital is equipped with health personnel comparatively better than other community hospitals in the province, the hospital is in trouble with the referred cases which were financially unprofitable but causing huge workloads on the hospital's workers.

3. *Impacts on the Relationship between Providers and Patients: Medical Malpractice and Suing by Patients*[4)]

Since the UC was implemented, the issue of protecting the health service's consumers and

4) "The malpractice suit is a symptom of the breakdown in the doctor-patient relationship and most suits grow from the interaction of suit-prone doctor and suit-prone patient" [Somers and Somers 1961: 434].

patient's rights has been given attention and widely promoted to both the general people and health service providers. The Legislative Act of National Health Security 2002 (Issue 41) has allowed patients to sue providers and health facilities if medical malpractice has occurred during, or as a consequence of, medical treatments or processes causing physical damage or loss. From then on, suing and malpractice reports by patients of health providers have become more prevalent on mass media, such as newspapers and TV news reports.

This has brought a concern about negative impacts on patient-doctor relationships as well as anxiety on part of the providers in providing care treatment to patients, especially in a case with severe and complicated conditions, under current constraints of care provision ability at many public health facilities nationwide [Pakasith 2003].

At PCUs/HCs, providers mostly reported no changes of the relationship and attitude of patients toward service providers. On the other hand, many of them mentioned better and closer relationships with people in the community because of the requirement of PP work that push providers to visit people at their residencies more often.

At the hospital level, some providers perceived that patients' attitudes toward health practitioners have changed. Some values of the practitioner-patient relationship have been destroyed, commercialized and replaced by a customer-seller relationship. Many doctors and nurses viewed that medical suing by patients are a cause of depression and a critical pressure that affects practitioners' courage to provide care services. It is accelerated by the mass media that tried to bring the issue into the public concern. The number of staff at public facilities are inadequate and overworked with more patients coming to the hospital as a result of the UC implementation. With more pressure and higher expectations from the patients but less time for diagnosing, the public health practitioners, especially doctors, were in a higher risk situation.

Moreover, when practitioners need to protect themselves from medical malpractice, they have to diagnose patients carefully using all possible methods, which actually might not be really necessary and wasteful. This increases the costs of health services to the hospital and possibly pushes it into financial problems. Empirically, at community hospitals where medical instruments are not adequately equipped, doctors would be less confident to practice IP care, especially care that needs an operation, because of the high risk of medical errors and malpractice. After weighing between "risks" and "costs of referral," the doctors tend to refer more IP cases to higher level hospitals in the province —Khonkaen and Kalasin Hospitals—which increases workloads at those hospitals and possibly causes conflicts between the hospitals.

Being optimistic, some providers mentioned that the practitioner-patient relationship is still unchanged, based on sympathy and respect, not only "duty," between service providers (sellers) and receivers (buyers). They agreed that the protection of patients' rights is necessary and beneficial to both patients and providers as it pushes the providers to communicate and give better information regarding medical treatments and

diagnosis to the patients. And, at the same time, it is good for the patients to realize and be aware of their own right to be protected, which was quite neglected in the past. In the long run, the providers hoped that this would bring about a closer practitioner-patient relationship and higher quality as well as transparency of health care and services provided by the health care system.

The issues of "patients' rights" and "patients' responsibilities" were raised by many respondents. They argued that because UC has misinformed and over-advertised the 30 Baht Scheme, people currently misunderstand the UC intentions and are over-dependent on public health assistance. "Patients' rights" are necessary to be protected but they should come together with the understanding of "patients' responsibilities" also.

Conforming to the patient-centered model that argues that doctors and patients live in different worlds, "the world of individual patient and her or his unique experience of ill health and the biomedical world of clinical experts" [Badura 2004: 131], doctor-patient communication is considered crucial, besides a more active role and empowerment of patients in the health care system.

4．*Sarng-Nam-Sorm (SNS) Strategy: Policy, Practice and Constraints at the PCU/HC Level*

This question was purposely asked to the providers at the PCU/HC level. Regarding the policy intention with the SNS strategy, most respondents viewed the SNS as a good conceptual strategy for the health service system in the long run. They believe that if the strategy successfully proceeds with intensive disease prevention and health promotion (PP) attempts, the health status of the Thai people will be improved which, in return, reduces the number of patients needing curative care at health facilities. This will help lessen the national expenditure on health of both private and public sectors because, as empirically shown in many countries, the cost of PP service is much less than the cost of curative health care services.

In practice, even if PP work is perceived to have been given more attention from the health policy agenda with more purposeful work plans, the implementation is facing many difficulties and constraints from both the nature of PP work itself, and the unsupportive workforce and budget, specifically at the PCU/HC level.

A．*The Nature of PP Work*

PP work is mainly about attempts to change and adjust unhealthy behaviors of people. This is time consuming and concerns many controllable and uncontrollable factors. According to the well-known Lalonde's model for health prevention and promotion policy [Lalonde 1974 cited in Eilers 2004], five key factors that influence an individual's health are 1) personal characteristics, 2) the physical environment, 3) the social environment, 4) lifestyle and 5) the health care system. In this regard, PP work needs to be pursued continuously with good cooperation from the people. Health workers must have a good relationship and be trusted and this is not easy to achieve in a short time.

Moreover, the work often needs health workers to go and visit people in their homes to help educate about health knowledge and observe their lifestyles. Much of the work is possible only after normal working hours in the evening, which may not be convenient to the health workers. These issues were seen as being very tough and difficult by respondents at the PCU/HC level.

B. *Inadequate Workforce with Heavy Workloads*

This point is about the lack of nurses and the insufficient number of health workers, mainly the PHO group, at most PCUs/HCs. This is in contrast to the findings from a study conducted in the four regions nationwide each of eight selected provinces, including Khonkaen, by Pagaiya *et al*. [2006], which indicated that the number of existing staff was adequate for work at the PCU/HC level.

According to work tasks, at least 4–5 health workers are remarked to be minimally required at a PCU/HC, that is, 1 nurse, 2–3 PHOs, and 1 management staff (head of the PCU/HC).[5] In reality, there are only, on average, 2 to 3 workers for every 5,000–10,000 population at PCUs/HCs, mostly without nurses in Khonkaen and Kalasin (except the PCU/HC situated in or separated from but close to the hospital). The 2 to 3 existing workers, mostly PHOs, are required to practice primary curative care for patients (which is actually supposed to be performed by a nurse) and also go out to communities in the sub-district to provide PP services to people. By rotations, at least one worker needs to stand by at the PCU/HC for patients who might come, while the rest go out to the communities.[6]

With huge amounts of paperwork and a significantly larger number of patients coming for care after the UC implementation, all providers at many PCUs/HCs need to be at the PCU/HC during the day and go out to the communities for PP work in the evening.[7] This is a major constraint in achieving PP works as planned by the SNS strategy. The work proportion between curative care and PP service provisions is

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5) According to the requirement of workforce at the PCU/HC level by the MOPH, one PHO is optimally assigned for every 2,500 population while one nurse is assigned for every 5,000 population.

6) Because there was no supporting team at the PCU/HC level, for each patient case, the worker needs to perform all the processes from finding the patient's health folder, diagnosing, treating patients, prescribing medicine, supplying and labeling the medicine he/she prescribed, and filing the report on the computer data base.

7) After the UC implementation, some work tasks of health rehabilitation were transferred from the hospital to PCUs/HCs in the same CUP, such as periodic clinics for diabetic patients. This was hoped to help the patients as they need not to come as far to the hospital. A medical team visits the PCUs/HCs on the appointed date to meet them instead. This is of benefit to the patients but becomes another work task for the PCU/HC's workers as they have to stand by nearly the whole day to support the medical team and cannot go out to conduct PP work or do their own jobs.

proposed to be 30: 70 by the UC policy but this is not practicable in all of the PCUs/HCs visited. Usually, the proportion is 50: 50, 60: 40 or even 70: 30.

C．*Unsupportive UC Budget for PP Work*[8)]

Even if some literature has evidenced a greater incentive for providers to support self-care and health promotion of patients in the health system with "capitation" as a provider payment method [Hibbard *et al*. 2001], this is not the case in the actual situation of PP work in the field. Of the limited UC budget allocated to a CUP, the largest part is assigned for curative care (about 70% for OP and IP care), which is performed mainly at the hospital level, while a small part is transferred to the PCU/HC level for PP service provisions (about 15%). The amount of budget per head reaching PCUs/HCs for PP work after fixed costs and OT allowances for the workers was only about 25–30 baht/head/year in 2005. This amount is claimed to be nearly not enough even for purchasing needed medical products let alone for disease prevention work.

Supportive budgets for workers to go out to communities for PP work, for example, for transportation costs, gas for motorcycle, or mobile work payments, moreover, are indicated as not provided. In this regard, some respondents suggested that the capitation budget should not be only clearly defined but also "strictly followed in practice" to separate the budget portion for each health work into OP and IP care and PP services. The budget for PP work should be transferred directly to the PCU/HC level, and should not pass through the CUP or the hospital.

Under the current situation that UC budget as a whole is inadequate to finance all the assigned work of the CUP, the budget for PP work, which is transferred via the CUP, could be partly pulled out and used for curative care at the hospital before being allocated to the PCU/HC level. Under this context, working at PCUs/HCs for PP services would be very inflexible and dependent on the perspectives of the hospital's director (CUP's head), which could be disadvantageous as the director usually pays more attention to curative care at the hospital than PP services at the PCU/HC level. Consistent to a recommendation of a study in Phitsanulok province by Kumluang *et al*. [2005], budget allocation to the PCU/HC level should consider the demand side and take the specific needs of the local communities into account more than at the present.

Arguably, many respondents remarked that the SNS strategy was written well in the UC policy but mal-practiced by mismatched UC budget allocation and the actual implementation. UC and the 30 Baht Scheme are claimed to focus mainly on curative care, allocating more budget and financial support to the hospital level and health practitioners there, than to the PCU/HC level and PHOs who are the main practitioners of the PP work. The 30 Baht Scheme was also advertised by the government as providing nearly

8) UC budget allocations for CUPs of the MOPH's hospitals in Khonkaen [2004] and Kalasin [2005] are depicted in Fig. 3 and Fig. 4, respectively.

free curative care services, which accelerated the increase of people coming for curative care at hospitals and PCUs/HCs rather than taking care, preventing disease, and promoting their own good health.

IV Health Service Financing Reforms: Health Budget Allocation on the Capitation Basis, and the Co-payment

Currently, during the transitional period of the National Health Security Act, the UC budget from the NHSO to public health facilities of the MOPH is transferred via the MOPH. As mentioned previously, the budget is provided to cover all expenditure of health service provision activities for the UC patients and also includes salary and payments of public health workers practicing at the facilities. Initially, the budget allocated to the provincial level was intended to include the salary budget with an aim to re-allocate health personnel from over-staffed areas to under-staffed areas. Nevertheless, the intention was not accomplished due to massive resistance from the affected groups. From 2003 up to the present, FY 2006, the annual UC budget to public health facilities of the MOPH has subtracted the salary part at the national level before being allocated to the provincial level. The salary budget for public health workers has been allocated at the national level since then (the UC budget subtracted for salary accounts for 79 percent of the total amount of the salary of public health officers. The other 21 percent is subtracted from the facilities' revenues from patients of the CSMBS and the SSS).

At the national level, the capitation rates approved by the government were defined with specific rates for each given work task, of which the part for health (OP and IP) care provisions counted for around 70 percent. However, at the provincial level, the allocation and management of the UC capitation budget were differed from province to province and was determined by communal decisions by related actors in the province. Fig. 3 and Fig. 4 depicted the allocation and management methods of the UC budget at the PPHO to public health facilities and CUPs of the MOPH in Khonkaen [2004] and Kalasin [2005], respectively.[9] As we can see, the UC budget per head after salary subtraction (with some budget buffered at the national level) to the provinces were only about 35–40 percent of

9) In both provinces, up to FY 2005, the UC budget per head was allocated equally to all public hospitals (all CUPs) in the province. This was complained to be unfair to hospitals with a small number of population—especially community hospitals in rural districts of the province—because they tended to get too little UC budget but needed to bear fixed costs in running hospitals which did not vary from bigger hospitals. In addition, bigger, higher level hospitals in provincial cities—general/regional hospitals—usually could obtain more revenue from patients of the CSMBS and the SSS than smaller, lower level hospitals. For FY 2006, with guidance from the MOPH and the NHSO, the budget allocation to CUPs and facilities in the provinces tends to be differentiated to the size and level of the facility. The proposed proportion of capitation rate to regional hospitals, general hospitals and community ↗

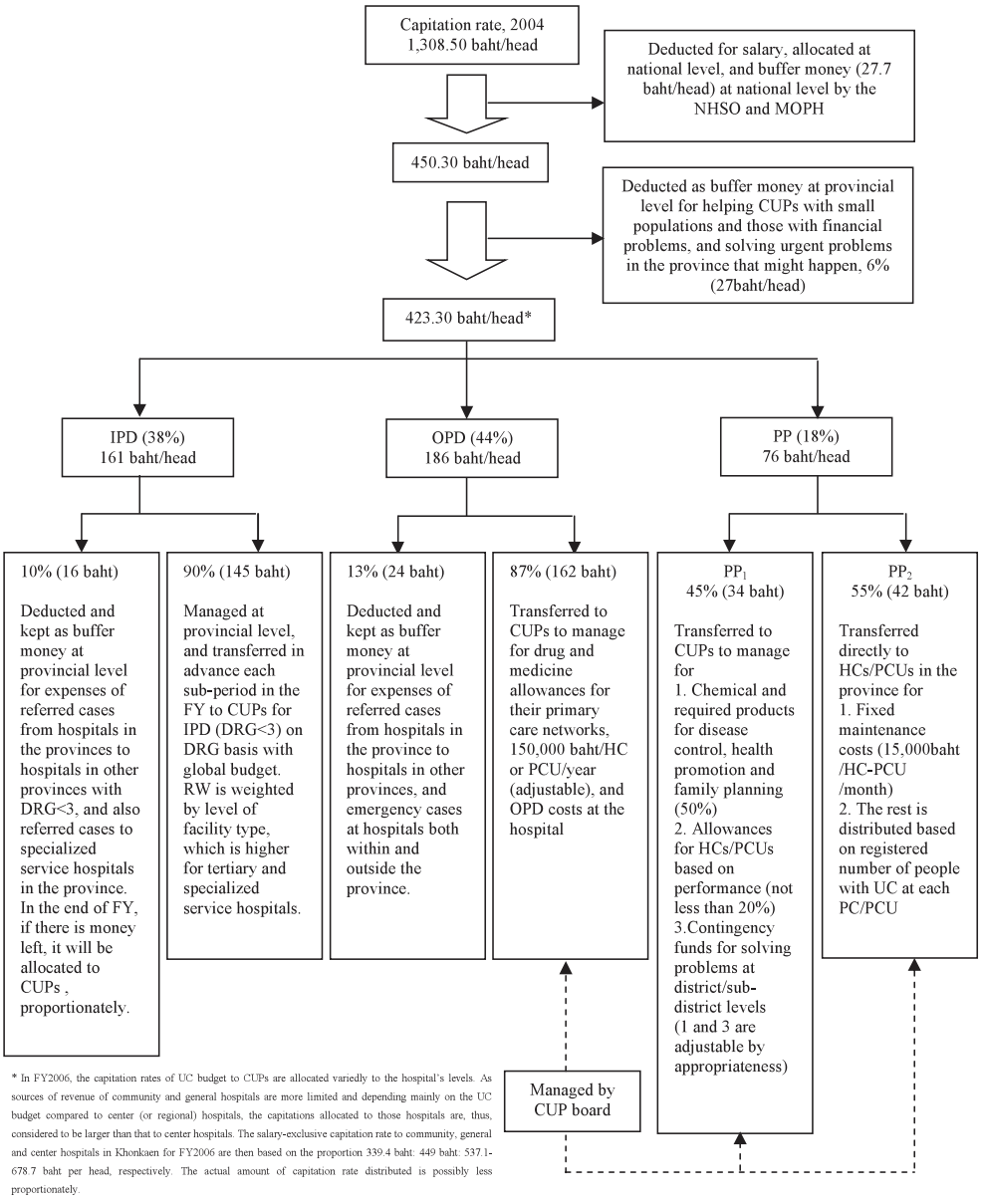

Fig. 3　UC Budget Allocation for CUPs of the MOPH's Hospitals in Khonkaen, 2004 (summary)

Source: [Thailand, Department of Health Insurance, Khonkaen Provincial Public Health Office, Khonkaen. Obtained: June, 2006]

Note: In 2006 —out of 1,562,526 total population in Khonkaen— 1,22,456 (78.5%) are covered by the 30 Baht Scheme.

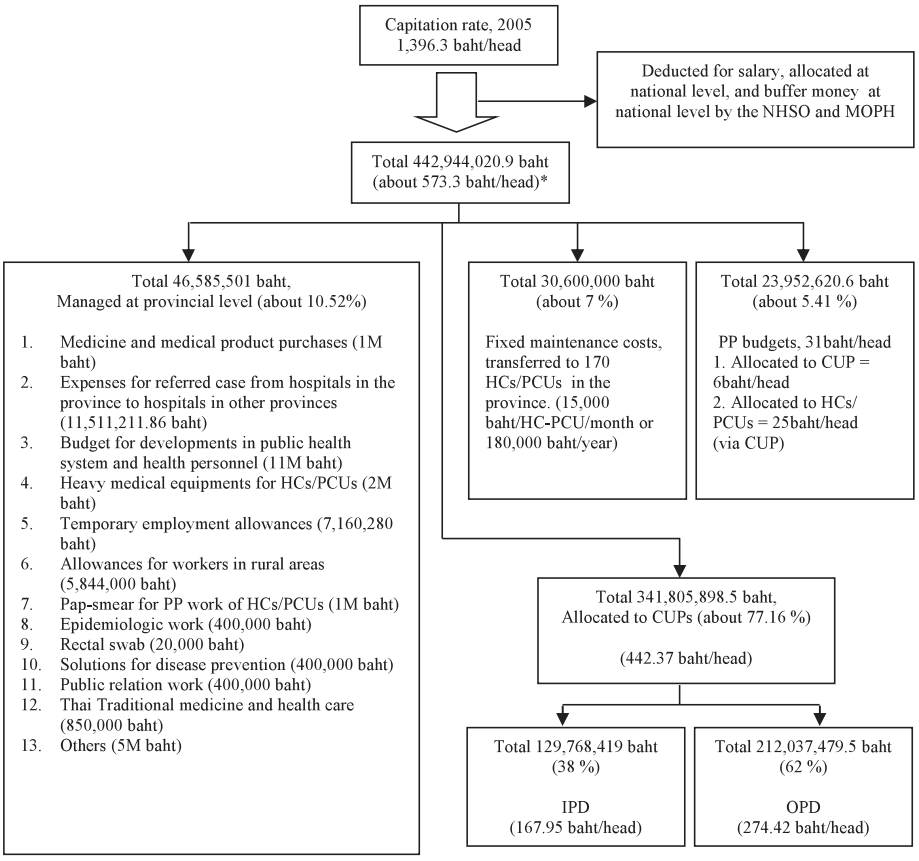

Fig. 4 UC Budget Allocation for CUPs of the MOPH's Hospitals in Kalasin, 2005 (summary)
Source: [Thailand, Department of Health Insurance, Kalasin Provincial Public Health Office, Kalasin (Obtained: June, 2006)] with adaptation by the author
Note: *In 2005, out of around 911,000 total population in Kalasin, 772,665 (84.8%) were covered by the 30 Baht Scheme.

the approved capitation rate in the given fiscal year.

From the charts, the budget management in Khonkaen is more, with specific determined percentage, based on defined dimensions of health work—OP and IP care and PP works—than in Kalasin, where the budget seems allocated rather based on expenditure items (budget was not allocated as a specific percentage but in amount for each expenditure item). However, calculated into percentage proportions by the dimensions of health

↘ hospitals at the national level for budget in FY 2006 are 339.4 baht: 449.4 baht: 537.1–678.6 baht, respectively. The lower level (implying smaller size) hospitals are to be allocated a larger budget per head than the higher level (bigger size) hospitals.

work, the budget in Kalasin was allocated not much differently from the allocation in Khonkaen—about 77.1 percent for OP and IP care, and 12.4 percent for PP works.[10] The rest—about 10.5 percent—of the budget, which was kept at the Kalasin PPHO as provincial buffer money, were, somehow, significantly higher than Khonkaen, which was only 6 percent.

Asked regarding the adequacy of the UC budget and appropriateness of the capitation rates of the 30 Baht Scheme so far, the respondents both at the PCU/HC level and the hospital level were indecisive to answer remarking that it was up to which criteria would be used.

If "adequacy" was meant in regard of the survival of the health facility and its financing, the answer mostly would be that it was enough and the hospital could survive, even with some financial deficits and debts. However, if "adequacy" was meant in relation to assigned work tasks and expected outcomes of the UC policy, it was said to be hardly enough and inadequate to have the facility achieving all work assignments at the quality levels required by the NHSO, the MOPH and the patients. In addition, in this regard, investments for long-run development and quality improvement of care provided at the facility were said to have been forgotten, due to the limitations and inadequacy of the budget.

The capitation rates so far were mentioned to be inadequate and under-estimated. Furthermore, the worse thing was that net amounts of the capitation budget reaching the facility were even less, because of the buffering of budget at both the national (the MOPH) and provincial levels (the PPHO). From a recent study, the capitation rates were confirmed inadequate to cover the actual costs of health care and service provision at public health facilities nationwide as presented in Table 3. This was caused by the use of lagged data in the estimations which was inaccurate and, also, bargaining on the rates at the national level when the approved rates by the government were lower than the proposed ones by the estimation committee. In addition, as noted by Chanduayvit [2005],

Table 3　The Capitation Rates: The Approved and Should-Be Rates from Updated Estimations

Capitation Rate (baht/head)	2002	2003	2004	2005
Proposed by the committee of capitation estimation	1,202	1,414	1,447	1,510
Estimated with actual information in the years shown	1,318	1,394	1,600	1,510
Approved by the government and allocated to contracted facilities	1,202	1,202	1,308	1,396
The gap between the approved rate and the should-be rates (baht/head)	− 115	− 192	− 292	− 114
The gap in total capitation budgets (million baht, UC population = 45 million)	− 5,196	− 8,622	− 13,139	− 5,130

Source: [Thailand, NHSO 2006: 136]

10) The author accepts that the comparison is not completely practicable as the data of each province is for different years. Here, only the logics of budget allocation and management between the provinces are intentionally compared.

the care utilization rate numbers from the Health and Welfare Survey (HWS) of the National Statistical Office (NSO) that were used in the calculation of capitation rates so far also underestimated the actual situations. Since 2002, total deficits in the whole health care system are expectedly around 32 million baht. This problem has already been realized by the NHSO and the capitation rate estimation committee. The situation hopefully will be relieved by the capitation rate which has been increased to as high as 1,659 baht for FY 2006 (an 18.8 percent increase from the rate of FY 2005; 1,396 baht).

Some providers mentioned that compared to work tasks and expected outcome by the NHSO and the MOPH, the budgets of FY 2004 and 2005 were enough to cover only about 50–60 percent of the actual costs. The situation at present is that most facilities—PCUs/HCs and hospitals—are trying not to be indebted and carefully manage their financial status with the limited budget to which they were allocated. Only really necessary items and new medical equipment, as well as investments and construction, will be purchased and proceeded. This was remarked by many respondents to also affect the quality and standard of health care and services provided by the facility. Practitioners, especially doctors, needed to be more concerned about costs of medical care and treatment provided to patients. However, most of them guaranteed that the standard of care would not be below quality or harmful to the patients. It is possibly not satisfying the HA requirements or the level expected by the NHSO and the MOPH.

Many concerns were raised regarding of the impact of an inadequate budget on the long term. If the situation is not changed with a better rate of the capitation budget in the future, investment and improvements of public health facilities would be frozen or even worse, as well as the standard and qualities of provided services. In the long-run, consequently, this will affect not only the sustainability of the facilities themselves but also of the whole health service provision system.

The director of a hospital cited a system called the "Robin Hood system," which was a cross-subsidization mechanism between the rich and the poor patients at the hospital, and which collapsed after UC, as the hospital could no longer fully charge the rich patients to subsidize the poor ones. It might be true that all patients with UC can get the same standardized qualities of care no matter whether they are poor or rich, but under the circumstances of inadequate capitation budget, the standardized care qualities tended to lower standards, affecting all patients.

Some providers were critical that a huge part of the UC budget was inappropriately buffered and spent on commanding and managing bodies at the MOPH and its local offices, instead of being allocated to the level of practise at CUPs. Increases in the capitation rates are meaningless if there are still huge parts of the budget buffered at the national and provincial levels.

Some respondents at community hospitals mentioned that they agreed with the consideration of the NHSO and strongly supported the idea to allocate capitation budget to general/regional hospitals at a lower rate than to community hospitals because those

hospitals—Khonkaen and Kalasin Hospitals—can earn revenues from other sources much more advantageously from patients of the CSMBS and the SSS and high cost care provisions.

From the interviews, some hospitals are reported to be currently indebted or to have been indebted in the past. These hospitals are Khonkaen Hospital, Chonnabot Hospital, and Waengnoi Hospital in Khonkaen, and Kalasin Hospital, Sahatsakhan Hospital, and Kuchinarai Hospital in Kalasin. These hospitals can be grouped by causes and reasons of being in financial deficits and debts as follows.

a) *Huge investments in physical infrastructure and medical equipment.*
At Khonkaen and Kalasin Hospitals, as the general/regional hospital in the province, investment is necessarily required in term of developments in new technology and advanced equipment to enhance the higher treatment capabilities of the hospital. According to the interviews with the directors, the hospitals were indebted even before the UC implementation, but the situation became even worse after implementation when the budget allocated was based on the capitation basis. Presently, investment expenditure of the hospitals is much tighter. The deficits from the past have been greatly decreased as the hospitals are trying to keep themselves in financial balance by spending as little as possible.

b) *Inadequately allocated UC budget due to the factors of size and location of the hospitals.*
Deficits at Chonnabot, Waengnoi and Kuchinarai Hospitals are classified into this group. In the cases of Chonnabot and Waengnoi Hospitals, the hospitals cover a district with large area but with a (too) small population. The UC budget, allocated on the capitation basis, is insufficient to cover expenditure of the hospitals, of which the largest parts are fixed and uncontrollable costs. This expenditure does not vary with the number of patients served by the hospitals, such as maintenance costs of the hospital and salary of (the minimum required) health workers. Even if there is an agreement by all hospitals in the province to subsidize these small hospitals which are being indebted by using the common money buffered at the provincial level, directors of these hospitals recommended that the regulation of UC budget allocation with the capitation basis at the national level should have specified the minimum guaranteed budget that all hospitals would get.

In Kalasian, Kuchinarai Hospital is in a different situation. Due to the location of the district which is in about 80 km from Kalasin Hospital and other general/regional hospitals in neighboring provinces, Kuchinarai Hospital were built up much larger than other community hospitals in the province and equipped with many costly medical instruments and a large number of health personnel. The intention was to empower the hospital as a hub for patients in

Kuchinarai district and neighboring districts who have difficulty accessing the general hospital in the provincial city. Anyway, after the budget is allocated on the capitation basis, the hospital is facing financial trouble because, compared to the number of population in the district, the hospital is considered over-sized. The director of the hospital informed this study that it has been hugely indebted since 2003 when the salaries began to be subtracted from the UC budget at the national level (there used to be a financial surplus in 2002). Financial deficits have persisted because the hospital has not stopped investing for its long term improvements. The hospital received a provincial contingency fund from Kalasin PPHO (from the UC budget buffered at the provincial level) of 15 and 20 million baht in 2004 and 2005, respectively.

c) *Inefficient management of the hospital's director.*

At Sahatsakhan Hospital, immense financial debts of the hospital during the beginning years of the UC implementation were claimed by a respondent to be caused by mistaken and inefficient management by the previous director. Even if the hospital is still indebted at the present, large parts of the debt have been paid back by the present director. In this regard, the financial management skills of the director—who is a doctor—are viewed crucial to the hospital's financial sustainability.

The hospitals that do not have financial troubles, in any case, have accepted that they have frozen investments and tightly controlled the budget spending since the UC was adopted, specifically since 2003 when the salary began to be subtracted from the UC budget at the national level. Most providers at these hospitals expressed concerns, as discussed previously, regarding the impacts of tight spending on the hospital's long run developments.

Regarding the issue of salary subtraction, which is related to the attempts of redistribution of health personnel, views of the respondents can be simply grouped into three trends.

a) *Agreeing with the subtraction at the provincial level.*

All directors of the community hospitals and PPHO' staff interviewed in this study totally agreed with the reformist view that the salary of health workers should be transferred with the UC budget, subtracted, and allocated at the provincial level to enhance reallocation of health personnel across regions and provinces to be based on the number of population served by facilities in each area.

The salary subtraction at the provincial level is believed to be able to reallocate health workers to health facilities in shortage in the northeast region and distant areas. In the short run, the hospital would be financially empowered to hire more workers (doctors, nurses etc.) to relieve workloads of currently

practicing workers. In the long run, depending on the director's perspective, it could possibly grant local students to study in nurse or medical schools with a commitment to come back after the graduation to work for the hospital for a specific period. Little by little, the drainage of health workers to central regions and problems of workload in the northeast region would be relieved and solved in the long run.

Under the current situation, hospitals, where the number of health personnel is inadequate to number of served population, need to spend a part of their UC operational budget, which is already quite limited, for hiring additional workers. It was seen as a double financial burden on the hospitals compared with the salary subtraction at the national level.

The decision of the switching of salary subtraction in 2003 was viewed as it was pushed by the benefit groups of health professions in the central region having a good connection with those in the MOPH. Hospitals in central regions are the beneficiaries from this decision. They comparatively obtain much more UC budget per head (after including the back salaries of health workers allocated at the national level) than those in other regions and, moreover, can generate much more income from patients of other health schemes,[11] besides the 30 Baht Scheme, with the advantage of a number of workers earning their salary mainly from the UC budget. The switching to the national level was remarked to leave the problems of inequitable health personnel allocations in the country unchanged, and collapse the UC's designed health system in the long run.

b) *Agreeing with (preferring) the subtraction at the national level.*

Within this group, many providers cited that they agreed that the subtraction of the salary at the provincial level can relieve health worker shortages at the facility they are working in. However, as a public worker, the subtraction at the national level is more secure and preferable to them. At the provincial level, management of budget regarding the salary of health workers is seen as less efficient than the management at the national level. Conflicts between hospitals in the same province were also said to possibly occur, especially between the general/regional hospital in the provincial city (with the largest number of health workers and high-paid specialist doctors) and community hospitals in the district level, if the salary was subtracted and allocated at the provincial level.

Another point of view is that the subtraction at the provincial level is not believed to re-allocate health workers more to the needy regions, but instead would accelerate brain draining and resignations of public health workers more to the private sector, especially the doctor group. The shortage of health workers in the northeast region is seen as a "structural problem" and malfuncti-

11) The Civil Servant Benefit Scheme (CSMBS) and the Social Security Scheme (SSS).

oning of the health system at the national level.

In addition, health practitioners cannot be attracted to the region only by using financial factors or money incentives, but requires many more factors. For example, in the case of doctors, most of the students who entered medical school were from the better-off families in the cities. After their graduation and 3-year commitment to work in a rural hospital with the MOPH, no matter how high a salary the hospital can offer, it is still difficult to hold them in the rural areas.

c) *Not agreeing with the salary inclusive capitation method.*

Some respondents interestingly disagreed with both methods of the salary subtraction. They suggested that the salary should have been excluded from the calculation of the capitation rate of the UC budget because the allocation of health personnel in Thailand, even in the beginning, is not equitable to number of population in many areas and this problem cannot be solved in financial ways only. Using the financial ways with the subtraction of salary at the provincial level would only squeeze health workers and personnel to leave the public sector.

V Difficulties and Problems of Health Workers Shortage at Public Health Facilities

The impact of these problems on the performance of the SNS strategy at the PCU/HC level has already been described in the previous section. At the hospital level, similar situations are also upsetting. The most influential difficulty is remarked to be the shortage of health practitioners, mostly doctors and nurses, which is consistent with a quote from the WHR 2006 that "a shortage of human resources has replaced financial issues as the most serious obstacle to implementing national treatment plan" [WHO 2006: 20]. With the constraint of an inadequate budget allocated under UC and the decline of the hospital's income from patient fees since 2001 as explained in Section IV, many hospitals have more problems in terms of workloads and tight budgets, which indirectly results in another form of workloads for the hospital's workers.

1. *Shortage and Misdistributions of Health Workers*

According to the annex statistical Table 4 of WHR 2006 [WHO 2006], total amount of practicing doctors in Thailand both in the public and private sectors was 22,435 in 2000. As a ratio to the total population, 1 doctor was practicing for every 2,702 of population, which was much higher than the ratio in other developing countries in Southeast Asia; for example, Malaysia (1 : 1,428 in 2000), the Philippines (1 : 1,724 in 2000), and Vietnam (1 : 1,886 in 2001).

Considered only the public sector, the number of doctors who are practicing cur-

rently nationwide is 16,155, according to Table 4. For the total population, 62.5 million, one doctor is roughly taking care of 3,870 people, while the standard ratio is properly determined to be one doctor per 1,800 of the population.

At the regional level, in Table 4, the shortage of health practitioners is the severest in the northeast region where, based on the necessary numbers of health practitioners estimated with the Geographical Information System (GIS) by the MOPH, the percentages of the shortages are the highest in all three professions—doctors, dentists and pharmacists. The doctor-population ratio of the region is as high as 1 : 7,392, while the ratio of Bangkok and central region are only 1 : 879 and 1 : 4,963, respectively. The misdistributions of health professionals across regions of the country are obviously evident. The allocations of doctors, dentists and pharmacists are clustered in the capital city and central region while are scant in the northeast region, where about one-third of the population live.

At the provincial level, according to Table 5 and Table 6, the situations in Khonkaen as a whole seem a bit severer—with higher percentages of the shortage of heath professionals, based on GIS estimation by the MOPH—than the situation in Kalasin. By

Table 4 Shortage of Doctors, Dentists, and Pharmacists in Thailand by GIS, by Regions (2006)

Thailand	Population 2004, millions	No. of Doctors			No. of Dentists			No. of Pharmacists		
Regions		By GIS	Actual	% shortage	By GIS	Actual	% shortage	By GIS	Actual	% shortage
Bangkok (2004)	5.74	na.	6,526		na.	1,028		na.	1,239	
Central	14.89	3,204	3,000	− 6.4	1,783	778	− 56.4	1,688	1,323	− 21.6
North	11.97	2,448	2,151	− 12.1	1,360	564	− 58.5	1,289	1,148	− 10.9
Northeast	*21.46*	*4,290*	*2,903*	*− 32.3*	*2,401*	*793*	*− 67.0*	*2,275*	*1,438*	*− 36.8*
South	8.47	1,954	1,575	− 19.4	1,074	449	− 58.2	1,021	879	− 13.9
Total (exc. BKK)	56.79	11,896	9,629	− 19.1	6,618	2,584	− 61.0%	6,273	4,788	− 23.7
Total	62.53		16,155			3,612			6,027	

Source: [Thailand, MOPH, Report of Health Resource 2004 (in Thai) (http: // 203.157.19.191/Res 47. pdf); The Distribution of Health Workers by GIS (http: //imd. moph. go. th/gis/main/index. php), accessed on 09 Oct. 2006]

Table 5 Shortages of Doctors, Dentists, and Pharmacists in Khonkaen by GIS, by Hospitals (2006)

Khonkaen	Pop. 2004	No. of Doctors			No. of Dentists			No. of Pharmacists		
Hospitals		By GIS	Actual	% shortage	By GIS	Actual	% shortage	By GIS	Actual	% shortage
PPHO	0	0	24	+Infinity	0	2	+Infinity	0	9	+Infinity
Khonkaen Hospital	na.	167	156	− 6.6	59	15	− 74.6	61	40	− 34.4
Namphong Hospital	107,956	27	7	− 74.1	11	5	− 54.5	11	5	− 54.5
Khaosuankwang H.	35,645	4	3	− 25.0	3	1	− 66.7	2	3	50.0
Chonnabot Hospital	47,342	5	3	− 40.0	4	2	− 50.0	3	4	33.3
Waengnoi Hospital	42,155	4	2	− 50.0	3	1	− 66.7	3	2	− 33.3
Others	na.	207	90	− 56.5	125	46	− 63.2	115	74	− 35.7
Total (millions)	1.562 M	414	285	− 31.2	205	72	− 64.9	195	137	− 29.7

Source: the same as Table 4

Table 6 Shortages of Doctors, Dentists, and Pharmacists in Kalasin by GIS, by Hospitals (2006)

Kalasin Hospitals	Pop. 2004	No. of Doctors			No. of Dentists			No. of Pharmacists		
		By GIS	Actual	% shortage	By GIS	Actual	% shortage	By GIS	Actual	% shortage
PPHO	0	0	19	+Infinity	0	0	0	0	6	+Infinity
Kalasin Hospital	149,496	67	39	− 41.8	37	9	− 75.7	39	16	− 59.0
Huaymek Hospital	48,482	5	3	− 40.0	4	1	− 75.0	3	1	− 66.7
Sahatsakhan Hospital	38,754	4	3	− 25.0	3	1	− 66.7	3	2	− 33.3
Kuchinarai Hospital	97,038	22	12	− 45.5	10	4	− 60.0	10	8	− 20.0
Others	577,261	70	46	− 34.3	51	20	− 60.8	42	38	− 9.5
Total (millions)	0.911 M	168	122	− 27.4	105	35	− 66.7	97	71	− 26.8

Source: the same as Table 4

focusing on only the doctor group, the percentage of shortages in Khonkaen and Kalain are 31.2 percent and 27.4 percent, respectively. However, comparing between the hospitals in the provincial city of each province, Khonkaen Hospital, which is a regional level hospital, is allocated a much better number of doctors than Kalasin Hospital, a general level hospital. This is intentional because Khonkaen Hospital is a regional hospital for tertiary level care not only for patients in its province but also neighboring provinces. According to this, the community hospitals in Khonkaen tend to have a worse shortage of doctors than the community hospitals in Kalasin.

Among the hospitals visited during the field survey in Khonkaen, Namphong Hospital has the worst shortage of doctors in the province, followed by Waengnoi Hospital. In any case, by the field observations, the situation of Waengnoi Hospital appeared worse because of its disadvantageous geographical location. The hospital is located in a rural district far from the provincial city, which is difficult to access by public transportation. The turnover of doctors, including the director of the hospital, is high, often nearly every year. The respondents at the hospital informed that not only doctors but also other health professionals are not willing to practice at the hospital for long—unless they are local people—because the district is quite rural and less developed than other districts in the province. Workloads are also problematic at the hospital. Since the district is far from other urban cities and its population is mostly poor, the hospital is immensely depended on by people, with a large number of patients of OPD and IPD.

On the other hand, Namphong is a district near to Khonkaen provincial city and most of its habitants have a middle class income. Even if Namphong Hospital has a greater shortage of doctors based on necessity according to the GIS, the situation tends to be better as some patients in the district, as remarked by the respondents at the hospitals, rather visit private clinics or hospitals in Khonkaen city.

In Kalasin, Kuchinarai Hospital has the greatest shortage of doctors. The hospital is medium size, proportionately larger than other community hospitals in the province, with 90 IP beds. Even if the hospital is located in a district far from Kalasin city, the

district is more urbanized than Waengnoi Hospital in Khonkaen. Due to this dissimilarity of urbanity, the doctor shortage situation in Kuchinarai Hospital differs from the situation in Waengnoi Hospital. Kuchinarai Hospital was built to be oversized relative to the number of population in the district so as to also to serve patients that might be referred from other community hospitals in neighboring districts. Unlike Waengnoi Hospital, the shortage of doctors, thus, is not insufficient for the local population but for the population it is intended to serve in the sub-provincial area.

There is the same reason for the shortage of doctors at Kalasin Hospital (a provincial, general level hospital) and Khonkaen Hospital (a provincial, regional level hospital). At Kalasin Hospital, the vice director said that the shortage of doctors at the hospital is severer than estimated with the GIS, since the actual work tasks are heavily increased by referred cases of IP from community hospitals in the province, which increased sharply after 2002. Occupancy of IP beds was cited often over the capacity (500 beds) at the hospital.

From Table 5 and Table 6, we can notice that doctors, dentists and pharmacists are over-supplied at the Provincial Public Health Office (PPHO) in both provinces. Because the PPHO is not a health facility providing health services to people, estimated with the GIS, health personnel and practitioners need not be supplied there. In reality, however, many health professionals are working there for managerial tasks and health policy and strategic planning for the province. The professionals, even if not providing medical care, are viewed to be necessary at the PPHO to some extents. But it was criticized by some respondents that the number of professionals, especially doctors, is inappropriately over-supplied. There are 24 and 19 doctors working at the PPHO, including the head of the PPHO, in Khonkaen and Kalasin, respectively. This is seen as a waste of professionals from the health service provision system to the management division, which is not economical worth the costs to the nation of producing these professionals. This is similar to the criticism of why the director of a hospital has to be a doctor.

At the hospital level, the professions that are reported to be severely in shortage are doctors and nurses. Even if the situation of nurses seems better overall than the situation of doctors and other health professionals, the shortage of doctors has caused a negative spillover on nurses' workloads. Since doctors and nurses usually work closely, when the number of doctors is not adequate to practicing medical care for patients in the hospital, nurses then will be asked to assist to perform some medical practices, which mostly are not part of their own duties but are part of the doctors' duties, such as injections and minor medical treatments. As mentioned in the issue of the relationship between health professions, many nurses complained that they were overloaded and working far beyond their own duties.

The inadequate number of doctors and nurses at the hospital is considered to be the main cause of the failures of the Klai Barn Klai Jai (KBKJ) strategy of the UC policy in the

CUP at the PCU/HC level. Nurses, because of overwork at the hospital, cannot be allocated to provide primary care at PCUs/HCs in the same CUP. Moreover, in some CUPs, for example, Kuchinarai CUP and Waengnoi CUP, a medical team including doctors, nurses and other health professionals is not able to rotate even once a month to each PCU/HC to provide care for chronic patients—mainly, diabetes and heart disease patients. The patients need to visit the hospital to see a doctor as appointed every month. The failures of the KBKJ strategy are claimed to make the principle of primary care networks of the UC policy unworkable because most of patients are still coming to the hospital rather going to PCUs/HCs for the primary care services. This, as a result, becomes a heavier workload on practitioners at the hospital and leaves them even less possible time to visit or rotate to the PCU/HC level.

2. *Resignations and Drains of Health Workers from the Public Sector*

The problem of health worker shortages, which consequently results in heavier workloads at the health facility, are exacerbated by the drainage of public health workers out of the public sector. The factors driving this drainage vary with the profession groups and are summarized from the interviews in Fig. 5.

A. *Drainage of Doctors*

Drains of doctors from public hospitals to the private sector have been paid attention the most by the MOPH, especially since the UC implementation. The doctor-population ratio in the public sector rose significantly from 1 : 3,277 in 2001 to 1 : 3,569 in 2002 when the 30 Baht Scheme was introduced. The number of doctors resigning from the public sector in 2002 (564) was double the number in 2001 (276) and kept increasing in 2003 [Thamarangsi 2003].

Thamarangsi [2004] found that of the 743 doctors who resigned during that period, 75 percent were young, average age 30.6 years old, general practitioners—of which half had violated the government contracts on the 3 year term of compulsory public services. Nearly half of them had previously worked in community hospitals. Large proportions of this doctor group resigned from hospitals in the central region (38.5%) and the northeast region (29.6%). One of the interesting findings is that 56.6 percent of the resigning doctors nationwide were originally from, or had a domicile in, Bangkok. In the study, even if the reasons of the resignation were not investigated, the characteristics of doctors who resigned from the public sector could imply some inferences about their reasons for resigning.

From the interviews with doctors in Khonkaen and Kalasin, major factors that might push the decision to resign from the public sector include:

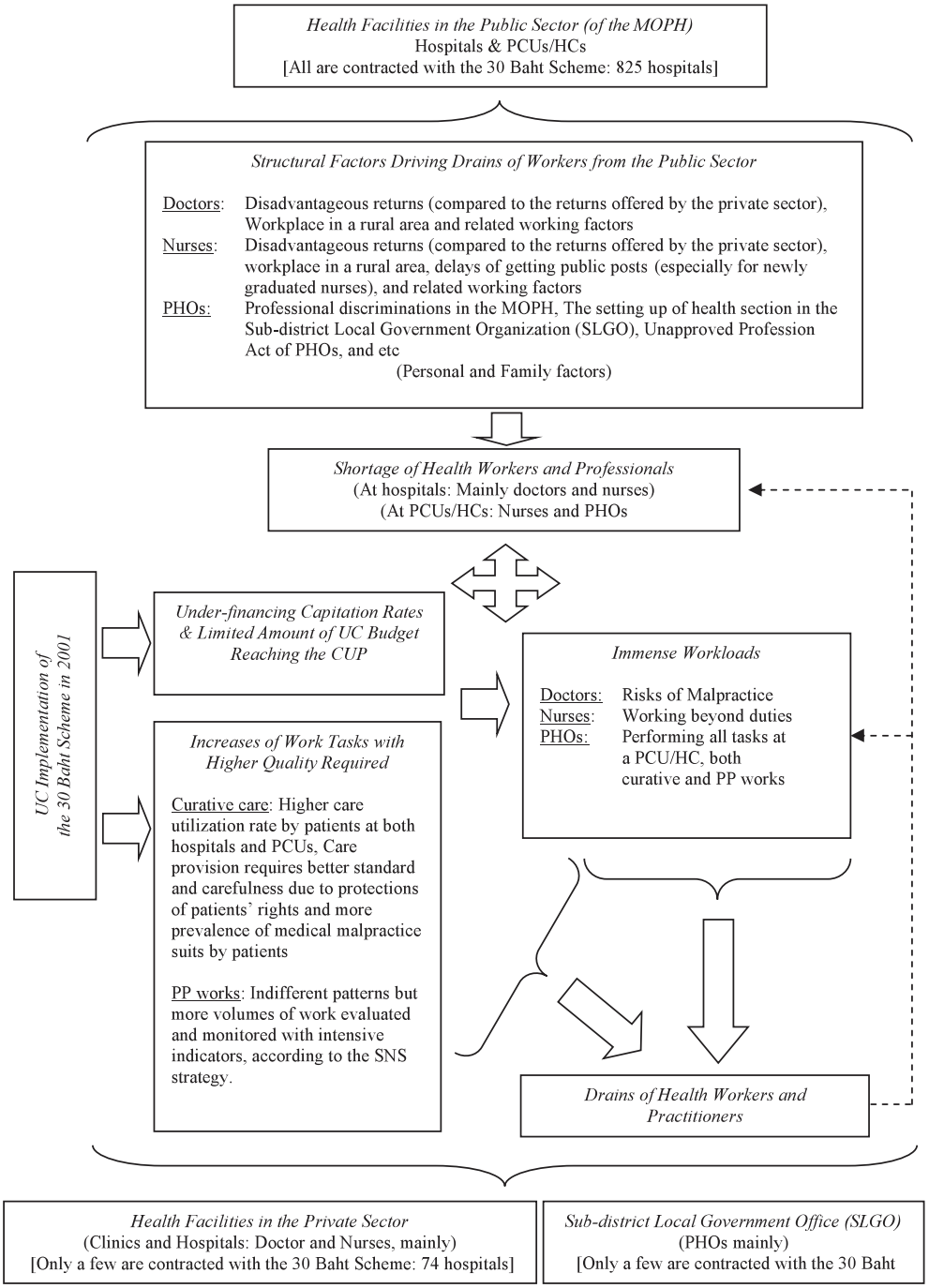

Fig. 5　Drains of Health Workers from the Public Sector

Note: Based on empirical interviews with health workers in Khonkaen and Kalasin.

a) *Disadvantageous returns in comparison with the returns offered by private hospitals or clinics*.[12)]

This is cited as a primary but not necessarily the deciding factor, since the satisfaction on returns depends on individual expectations and situation of each doctor. Payoffs to a doctor offered by the public sector, in spite of being the most prioritized compared to other health professions, are much less than half of the payoff offered by the private sector. The newly graduated doctor in public hospitals can be paid totally as high as 45,000–75,000 baht. Compared to the minimum guaranteed salary rate offered by private hospitals which is roughly at 90,000–100,000 baht as generally posted in the vacancy section in newspapers, the public sector rate can be seen as very disadvantageous (according to the principle of "opportunity cost").

The gap of payoffs to doctors in the public and private sector is commented, in this study and by some academics [Chanthorathat Na-Ayuddhaya and Pinpratheep 2003: 55], to have been worsened by a conflict of policies of the government in promoting Thailand to be a "medical hub" for foreign patients in the region. Since, when the foreign patients, who can pay expensive medical bills, come for medical care in the country, they mostly visit private hospitals not public hospitals, this policy is seen to empower private hospitals' ability in paying doctors and attracting more health practitioners from the public sector.

Pannarunothai and Suknak [2005: 80] has estimated and found that an increase of 100,000 foreign patients visiting for care at facilities in the private sector as a consequence of the policy would increase the demand for doctors in the private sector by 200–400 doctors.[13)]

b) *Workplace and location of the public hospitals*.

As remarked by some doctors, students who could pass the entrance examination to medical schools in Thailand are mostly those raised up in the cities, especially in Bangkok, with better educational opportunities. After the graduation, due to the term of public service contracted with the government, those doctors are required to work in a public hospital in rural districts of the country for three years. Anyway, many of them tend to violate the obligation by paying 400,000 baht as the violation fine instead and go back to the cities or their domiciles, as found in Thamarangsi's study.

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12) Na-ranong [1992] pointed out evidence from a case study in community hospitals of the MOPH that the determining factors for the resignation of a doctor from the public sector were mostly financial, such as disadvantageous salary level and returns.

13) The MOPH had a target of 1 million foreign patients visiting Thailand for health care and service in 2006, according to the Regional Medical Hub policy [http: //www.moph.go.th/ 2005], which, if successful, would increase numbers of foreign patients from 0.47 million in 2004 [Karnchanajitra *et al*. 2004].

Of those who agree to follow the contract, many request to move back to the cities after three years, if possible, from the rural district citing a reason to further study in a specialist program or go back to their domicile. If their request was rejected, some doctors might decide to resign from the public sector. Some doctors at community hospitals, the young doctors, informed this study that they also have plans to further study in a specialist program at a university in Khonkaen city or in Bangkok after the commitment period, and are unsure if they will return to the community hospital or not after becoming a specialist. This explains the high turnover of doctors—and the director—and the absence of long staying doctors at many community hospitals.[14)]

c) *Workloads at the public hospital.*

As a consequence of heavy workloads, malpractice becomes more likely because doctors cannot spend much time with each patient. This, in turn, can be a cause of anxiety of the practitioners under the situation that patients' right protections are recognizably promoted and medical malpractice suits by patients are more prevalent especially as portrayed by mass media.

B. *Resignations of Nurses*

Nurses who resigned from public hospitals were mostly new graduates who were employed by the public hospital on a temporary basis, as a temporary worker. Because of the delay of a "*public post*" offering to the newly employed nurses (recently the delays were reported sometimes over 2 or 3 years) and the declining numbers of public posts offered at public hospitals, many newly graduated nurses currently working at public hospitals feel insecure and unsure whether they will be offered a post as a public worker (or civil servant). As a public worker, the nurses expect to have job security and opportunities for promotion as well as superior welfare and protection provided by the government. Confirmed by all the nurses interviewed, these conditions are judged to strongly determine their willingness to work in the public sector, especially when considering that the salary offered at public hospitals is generally less than the amount they can earn at private hospitals.

The condition of delayed and uncertain public post offering might be a primary

14) Furthering a specialist medical program is a progress in the profession in the view of many doctors, as the pay offered in both sectors, especially in the private sector, are much better than pay of general practitioners. The propensity to resign from the public sector of those possessing specialist certificates is also higher than among the general practitioner group [Weerawat 1992]. In the public sector, specialists are mainly needed only at general/regional hospitals, not community hospitals, where there is not enough medical equipment. The request to further specialise doctors at community hospitals, in this sense, can be seen as another internal draining of doctors within the public sector from community hospitals in rural districts to general/regional hospitals in the cities.

reason of nurse resignation in the public sector, but it is not the only reason. The decision is, in most of the cases, also influenced by the condition of "*workloads*" on nurses in public hospitals. Many providers at hospitals in Khonkaen and Kalasin reported that "public posts" have become scarce and inadequately provided for by the government (via the MOPH) related to number of nurses needed at the hospitals in practice. Due to this, the hospitals need to hire extra nurses on a temporary basis using their own money from the UC budget. Since nurses who will be hired will not be entitled to the benefits of being a public worker, few nurses apply for these positions and the turnover rate is very high. This is, at the present, one major difficulty at these hospitals.

When a nurse is a public worker, more than 90 percent—excluding those who retire early—do not leave the public sector for the private sector, unless with there are some exceptional personal or family reasons. Nevertheless, even if draining from public to private sectors is less probable within this group of nurses, internal draining within the public sector from rural areas to urban areas is more evident. Empirically at one hospital in a rural district of Khonkaen, "*location of the hospital*" influences significantly on the nurse shortage problem. The conditions of "workplace"—respecting location, urbanity and distance from the domicile—seems to be a determinant of the willingness to work of nurses possessing a public post.

C. *Drains of the PHO Group at the PCU/HC Level*

This issue is related to the decentralization process of public services, including public health, to the Local Government Organization (LGO), which is now in a transitional period but is mandated to be completed nationwide in 2010 by the Act on Operation of Decentralization in 1999, an organic law of the 1997 constitution of Thailand.[15] To achieve the decentralizing purpose as planned by the Act, the MOPH is required to transfer its health service facilities—PCUs/HCs, community hospitals and general/regional hospitals—and workforces as well as financial budgets to the LGO in each area, mainly at the sub-district level. This will result in shifting away from MOPH around 80 percent of the annual budget of the MOPH and 90 percent of the Ministry's staff when the process is completed [http: //www.moph.go.th/2005]). Due to many concerns mainly regarding the readiness of LGOs and possible negative impacts on the health service provision system from the decentralized management, the process of transfer and suitable implementation are being designed and empirically investigated in 10 pilot provinces [Ouppayothin *et al.* 2004].

At present, this is still ambiguous and undecided by both the MOPH and the LGOs whether and how all public hospitals and PCUs/HCs should be transferred. During the transitional period, the two basic units of LGOs, which are the Sub-district Local

15) A LGO is set to be enhanced as an autonomous local governmental body in respect of both budget financing and managements after the process of decentralizing.

Government Organization (SLGO)[16] and municipalities,[17] covering a geographical area at the sub-district level are required (practically by its main duties to provide public services to the communities) to set up in its office a Fundamental Public Health Unit (FPHU) and hire some health staff or academics to work in the unit. The unit is considered to be functioning in overlap with the PCU/HC of the MOPH and situated in the same sub-district as the services provided are similarly focusing on disease prevention and health promotion (PP) services.

Informed by the respondents at the PCU/HC level and DPHOs in Khonkaen and Kalasin, drains of health workers in the PHO group of the MOPH to the SGLOs (to work in the FPHU) have tentatively started and are prevalent in many areas of the provinces and in the northeast region. Out of 5,000 applicants for posts at SLGOs all over Kalasin, for example, 2,000 applicants are those who are working in the PCUs/HCs of the MOPH, according to a health academic at the Kalasin PPHO. Significant reasons for the drains were denoted to be a) "unapproved Profession Act of Public Health Officers" by the MOPH, and b) "professional discrimination" which is reflected in terms of an unfair return structure and limited PC level progress of the PHOs at the PCU/HC level in comparison with other health professions of the MOPH.

VI Systematic Constraints and Cyclic Consequences in Public Health Service System

Findings on the issue of constraints and difficulties in health service provision activities revealed in the field surveys are summarized in this section with aims to draw out linkages and consequences of the situations from the PCU/HC level to the hospital level in the public health service system at the provincial level. In this regard, Fig. 6 simply depicts the systematic constraints and cyclic consequences digested from the interviews with providers in Khonkaen and Kalasin provinces.

Based on the designed structure of medical care and referral network of the UC implementation (Fig. 2), we found that impacts and failures of the policy intentions caused by constraints and difficulties, both physically and financially, at each level of health facility systematically affected and were affected in a cycle in the whole public health system. According to this argument, three components are described to highlight the causes, the consequences and the linkages of the systematic problems, which determinate effectiveness and performance of UC, and as well were impacted by the UC implementation, in the public health service system.

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16) " องค์การบริหารส่วนตำบล (อบต.)," sometimes referred as "Tambon (sub-district) Administration Organization (TAO)."

17) Municipalities are the local administrations in developed provincial cities, established before the introduction of the SLGO all over the country in 1995.

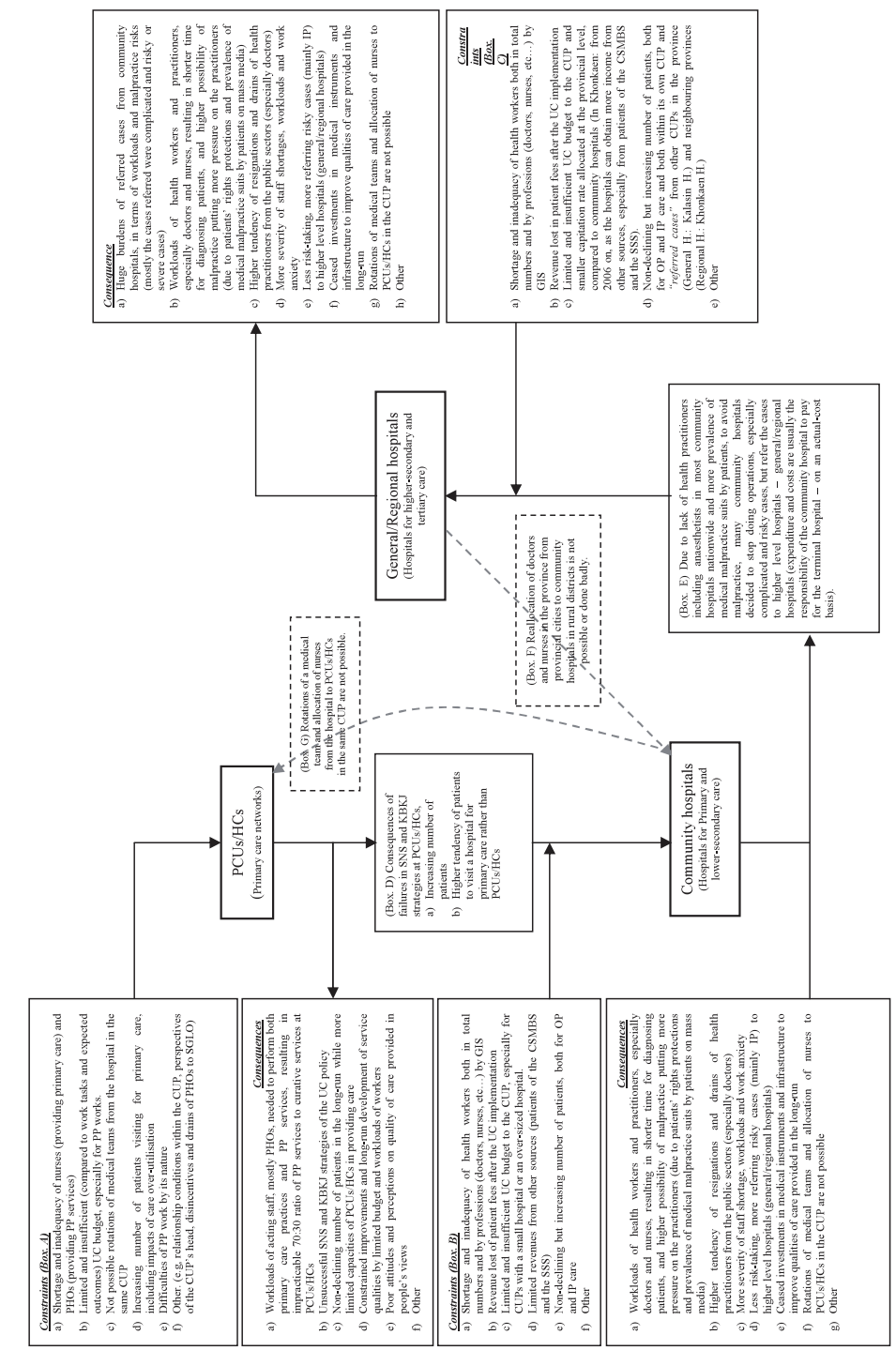

Fig. 6 Systematic Constraints and Cyclic Consequences in the Public Health Service System at the Provincial Level

The components are titled as 1) the primary constraints, 2) the linking consequences, and 3) the secondary constraints, and are explained as follows.

1. *Primary Constraints (Box A. /Box. B./ Box. C.)*

At all levels of public health facilities, from the PCU/HC level to the hospital level, there are primarily three factors in common that constrain the efficiency of operations and provisions of health services for patients with UC. These include,

a) Inadequacy (shortages) of health workforce, both by numbers and professions
b) Under-financing UC budget with underestimated and ineffectively allocated capitation rates, and
c) Inconsistency between health strategies and public recognitions towards UC

Adequate number of staff (a) and properly financed budget (b) to facilitate work tasks and assignments at health facilities are remarked as the most necessary factors in operating the provisions of health services to achieve effective outcomes as expected by the UC policy intentions. These conditions, however, are not satisfactorily met at most public health facilities visited in Khonkaen and Kalasin, both at the PCU/HC level and the hospital level.

The existence of these primary constraints, which finally results in increased workloads of health workers at most public hospitals and PCUs/HCs, is seemingly the same in many other provinces nationwide, not excepting Bangkok. Cited in a speech by the Minister of the MOPH, large public hospitals in Bangkok, such as Rajvidhi Hospital, Siriraj Hospital, and Ramadhibodi Hospital, are still overloaded by excessive number of patients visiting everyday even if they are university hospitals for medical students staffed by an advantageous number of doctors compared to other public hospitals [HSRI 2006: 13].

Somehow, shortages of health workers, both in terms of number and professions, are, in the views of providers in this study, in most urgent need of support and solutions from the government (specifically the MOPH), providers commenting that "workforce" is more necessary and applicable to lessen workloads at the present than "money." Even if a large enough budget is provided for hiring additional workers, it is still uncertain if the PCU/HC or the hospital can financially entice new health workers, especially doctors and nurses, to work at the facility.

Another troubling matter, interestingly complained about by many health providers, is about the inappropriate and misled understandings of the public (the Thai people) towards the implementation of UC which are mostly inconsistent with its conceptual intentions and policy objectives (c). This is claimed to be the mistake of over-advertisement of the 30 Baht Scheme with the slogan "treating all diseases" by the government that has misled people to be over-dependent on public health care system—social assistance—and less concerning with self-care, disease prevention and health promotion. Workloads on curative care services become heavier at public health facilit-

ies with more patients visiting healthcare facilities for care and, sometimes, over-utilizing the facilities. Working hours and human resources are consequently devoted to curative care work more than PP work, which is contradictory to the SNS strategy of the UC policy, especially at the PCU/HC level.

In addition to factors mentioned as the primary constraints above, the promotion of awareness on patients' rights protection and more prevalence of medical malpractice suits by patients have put more "anxiety and workload" on the health providers at all levels of public health facility—the PCU/HC level, community hospitals, and general/regional hospitals.

2. *Linking Consequences*

The ineffectiveness and failures of service provisions, caused by the primary constraints and consequential increased workloads due to the UC implementation, at the lower level of the public health facility are found to link to additional negative consequences to facilities at the higher level in the public health system—from the primary care level to the secondary care level, and finally to the tertiary level.

A. *Failures of the SNS and KBKJ Strategies: Negative Consequences from the PCU/HC Level to the Hospital Level (Box. D)*

Because of the constraints and workloads at the PCU/HC level, the SNS strategy—putting disease prevention and health promotion (PP) ahead of curative care—and the KBKJ strategy—providing health services near patients' residence—of the UC policy have failed to achieve effective outcomes.

The number of people falling sick has not declined and the patients who need just primary care do not visit the PCU/HC in their residing sub-district but directly access for care at the hospital level. Rates of care utilization at the hospital level, thus, tend to increase and not decline even in the long run, especially of primary care, which can be provided at cheaper costs at the PCU/HC level. This can be seen as wasting of health resources, both in terms of money and human resources, at the hospital where is supposed to concentrate instead on providing secondary and tertiary level of IP care. A similar experience of this "out of sequence" utilizing behavior of people was also found in Korea, caused by poor confidence of patients towards the qualities of care provided at primary level facilities [Peabody *et al*. 1995], which is to some extent similar to the situation as happening in Thailand.

B. *More Tendency of the Referral of Inpatient Cases: Negative Consequences from Community Hospitals to General/Regional Hospitals (Box. E)*

Because of the constraints and workloads at the hospital level—specifically community hospitals—stimulated by the impacts of failures of the SNS and KBKJ policies at the PCU/HC level, the referral rate of patients tends to increase from community hospitals (in

the district level) to general/regional hospitals (in the provincial or regional level).

Due to the lack of an anesthetist and required technology and equipment, as well as the shortage of health practitioners, most patient cases that require medical operations and complicated treatments are remarked to be impracticable in many community hospitals and need to be referred to the hospitals in provincial or regional city (Kalasin Hospital or Khonkaen Hospital, respectively, in this study), especially the cases with severe and risky conditions.

In the past, practitioners at community hospitals might take risks in practicing and doing the operations even under these unequipped conditions of the hospital. Nevertheless, under the current situation when patients' rights are being promoted with more prevalence of malpractice suits by patients which are also reported by the mass media, the practitioners become less likely to take risks and prefer to refer such cases to a higher level hospital. On one hand, this is a good sign for better safety for patients from medical malpractice. On the other hand, it causes a negative impact putting increased workloads on the general/regional hospitals where health workforces and budget are also not adequately supplied (relative to workloads).

Respecting this, it is possible that the community hospitals over-referring cases with an intention to lessen their own workloads and push risks to other hospitals even if, in fact, the hospital that makes the referrals is able to deal with the cases themselves. This suggestion was made by the vice-director of Kalasin Hospital, a general hospital in Kalasin province.

3．*Secondary Constraints*

In term of cyclical consequences backwards from the hospital level to the PCU/HC level, workloads and difficulties in providing health services at general/regional hospitals result in generating the secondary constraints to community hospitals and PCUs/HCs as follows.

A．*Not Possible or Bad Reallocation of Health Workforces in the Province (Box. F)*

When the general/regional hospital, in the provincial city, is facing difficulties in terms of workloads and shortages of health workers, it tends to attract and hire more workers and practitioners, possibly using revenues it can generate from other sources of income, not from the UC budget, such as fees from patients of the CSMBS and the SSS.

Thus it is possible to attract practitioners and workers from other districts in the province or from the neighboring provinces to move into the city, which will worsen the shortages of health workers, mainly doctors and nurses, at community hospitals, especially in rural areas. Even if presently the allocations of health personnel of the MOPH are mentioned to be strictly based on the GIS, the situation in practice is still so far from what it should be. Concerning the national level, by the same logic of systematic constraints and cyclic consequences in public health system as shown in Fig. 4, the

attempts to reallocate health workers and practitioners from prosperous cities in Bangkok and the central region to needy health facilities in the northeast region are forecasted to be fruitless and ineffective.

B. *Impracticable Rotations of the Medical Team and Allocation of Nurses to the PCU/HC Level from the Hospital (Box. G)*

In a CUP, especially that with a community hospital, rotations of medical team and allocations of nurses to provide primary care at the PCU/HC level will be even more impracticable because of the worsened shortages of health practitioners, especially doctors and nurses, and heavier workloads at the hospital.

In addition, under the current distribution method of the UC budget that most of the budget in a CUP is flowing via the hospital to the PCUs/HCs, due to the larger number of patients at the hospital both for outpatient and inpatient care as explained in Box. D, the hospital tends to keep a higher proportion of the budget for curative care works which will result in poorer financial support that it can allocate and provide to the PCUs/HCs. Due to the lack of nurses and medical teams rotated to the PCUs/HCs together with poor financial support from the hospital, workloads will become worse and the limited provisions of for PP work will be even less possible to achieve the outcomes expected by the SNS and KBKJ strategies at the PCU/HC level.

Other possible secondary constraints include a higher tendency of draining of health workers—doctors, nurses, and the PHO group—both from the public sector to the private sector and within the public sector from the rural areas to the urban areas, which are driven by the problems of workloads and low work motivation at all levels of health facility, but tending to be severer in the rural areas. These constraints—both the primary and the secondary constraints—and the negative consequences affected by the implementation of UC and its malfunctions simultaneously affect each other systematically in the public health service system—from the PCU/HC level to the hospital level, from secondary care hospitals to tertiary care hospitals, and from the provincial level to the national level—with backward negative consequences in a vicious cycle.

In the long run, if nothing is done to facilitate the constraints and improve the difficult situations faced by the providers at all levels of health facility—mainly regarding adequate health workforces and funding—the persistence of such a cycle would collapse the whole public health care system and remove the availability of good quality of care provided with UC, as intended by the policy objectives. Public facilities and health staff will suffer from terrible workloads and financial deficits, which tend to turn chronically worse in the long run as workers drain from the public sector to private facilities. The quality of care those facilities can provide would be ruined and less trusted by the UC patients, increasing the tendency of malpractice suits and worsening patient-provider relationships. UC, then, will become seen as social assistance for the poor people or those who need help from the government, implicitly as a poor quality service for the

poor, which contradicts its primary policy intention. The better-off, who can afford more expensive care, would avoid visiting facilities using the rights entitled by UC but prefer to pay out-of-pocket with hope to get better quality care and services, mostly at private hospitals and large public hospitals.

Finally, UC may completely collapse and (implicitly) turn to be just a "targeting scheme" providing social assistance to the poor only. When the time comes, those who suffer and are negatively impacted in the end would be all Thai people, not only those covered by the 30 Baht Scheme but also the SSS and CSMBS. This is especially true for the vulnerable groups in the lowest income level who have no choice to opt out for better access to good care.[18)]

This is a "worst case scenario" of health care system as an impact of the UC implementation with inappropriate management and under-financed budgets from the government, as forecasted by Tangcharoensathien *et al.* [2004: 30]. Even if cautioning with similar concerns on the collapse of the health care system in the long run, however, the causes that might lead to such the scenario, in that study, were solely due to insufficient funding of UC, mainly the inadequacy and under-financing of the budget on the capitation basis, to contracted providers.

Concluding Remarks

In this study, we assessed the views and opinions of health care providers in response to various issues and in regards to the implementation, constraint and performance of UC thus far at public health facilities—Provincial Public Health Offices (PPHOs), District Public Health Offices (DPHOs), community hospitals, general/regional hospitals and Primary Care Units/Health Centers (PCUs/ HCs)—in Khonkaen and Kalasin provinces.

From the interviews with health workers in various related groups and professions —including doctors, nurses, public health officers (PHOs), health academics, directors of hospitals, heads of PCUs/HCs—perceptions of the UC towards the providers, performance impacts of financing and structural reforms on the public health system, and patient constraints on health care provision at the facilities were reviewed and discovered. Mostly, providers possessed a good impression of the concepts and ideology behind UC, and supported the introduction of the 30 Baht Scheme in Thailand to achieve universal health care coverage for the people in the country. However, criticisms were also mentioned regarding the hurried poor planning of the implementation, as well as charges that the health system, itself, was still unprepared when the legislative act pushing UC adoption forward was enacted.

18) Negative spillovers of the UC implementation with the 30 Baht Scheme, regarding overcrowding and longer waiting time for care at public hospitals, on service delivery for patients of the SSS were evidenced in a study by Meepian [2003].

In brief, other major issues discussed with respondents included a) the impact of changes in the health care structure at the district level to be as a Contracted Unit of Primary care (CUP), b) impact of the UC implementation both directly and indirectly on the "relationships" of those involved in the health care system, c) the financial situation and impact from changes in budget allocation under the new method of provider payment under UC—"the capitation," d) problems and constraints regarding workforce shortages at health facilities, an issue that remained even after the adoption of UC and e) suggestions and comments for long-run improvements of the system.

Summarily, based on incidence and expressions from the providers, we can draw out a depiction to explain linkages and systematic consequences of the situations in public health service system from the PCU/HC level to the hospital level. The depiction simply describes the current situation, and the impact of UC on the whole system of care provisions with specific constraints at each facility level, and illustrates the systematically negative cyclic consequences of those constraints. Due to the "primary constraints" at all facility levels—mainly because of a shortage of health workers and inadequate budget financing—the SNS and KBKJ strategies of the UC policy face failures at the PCU/HC level, which, as a result, do not reduce, but rather increase number of the patients at the hospital level, both community hospitals and general/regional hospitals. Unbearable workloads and poor equipment with a lack of specific needed professionals (for example; an anesthesiologist) at most community hospitals at the district level has pushed them to more often refer patient cases to general/regional hospitals in the provincial cities because it is better and safer for patients. This is often viewed by the general/regional hospital as over-referral, and puts a tremendous burden on them in terms of physical workloads and financial cost.

We explained that these impacts from facilities in lower levels to those at higher levels are "linking consequences," which will eventually negatively result backward on the lower level facilities in terms of "secondary constraints." In the long run, if no attempt is made to ease the constraints and improve the situation—mainly regarding the inadequacy of the health workforce and funding—this vicious cycle of negative consequences could collapse the whole public health care system and UC. In the end, it is the Thai people who face the greatest risk and are most susceptible to suffering from this.

As mentioned, systematic and cyclic consequences of the healthcare system in Fig. 6 are found to start critically at the primary care level due to the failures and ineffectiveness of the SNS and KBKJ strategies at the PCU/HC level. PP works are not as practicable as expected by the SNS strategy because of the constraints of an insufficient workforce and a limited budget. An intention to empower PCU/HC to be a gatekeeper for primary care and a key actor for PP works of the UC policy is found inoperative in practice, which results in undiminished workloads at the hospital level and, therefore, wastes health resources—both financially and physically—when considering the whole health system. From the field surveys we found that, among all the

difficulties at the PCU/HC level, shortages of healthcare workers are the most significant constraints concerning both the insufficient number of health workers and the lack of needed trained professionals for primary curative care, especially nurses, and the rotation of a medical team as required by the SNS and KBKJ strategies.

However, the lack of health professionals—specifically doctors and nurses (regarding the availability of medical team rotations)—as well as the redistribution of them from cities to facilities in need in the distant areas are structural problems which need time for a better solution. In this respect, sufficiently supporting the budget is, therefore, recommended to facilitate better workers and service provisions at the PCU/HC level. In the short-run and medium-run, in spite of shortages and lack of health practitioners, a flexible amount of budget and financial conditions can expedite better the work at PCU/HC both for primary care and PP services. For instance, regarding primary care provision, assistance workers can be hired for support tasks like cleaning and paperwork, leaving health workers more spare time to do PP work. Additional money can also be spent as supporting budget to the staff for going out to do PP work in the community, such as for vehicle expenses or overtime pay for evening work.

In addition, the allocation of UC budget for PP service provisions should be separately defined and directly allocated to the PCU/HC level. As evidenced, the PP budget is included with the budget for curative care via CUP, in other words, the hospital, and is sometimes inefficient as it is too dependent on the opinion towards the significance of PP works by the director of the hospital, and also the relationship between the hospital and the PCU/HC. When the budget is tight, it is possible that the part of budget which is supposed to be allocated to PCUs/HCs will be partly pulled out to spend on curative care at the hospital. Even if direct budget allocation would guarantee the amount of the budget reaching the PCU/HC level for PP work, compared to the proportion of budget designated for curative care (OP and IP budgets), it is still recommended to increase the amount and proportion of budget for PP work in the calculation of the capitation rate

Concerning more equity of healthcare accessibility—especially of the population in peripheral areas—and services at lower cost, in case the government is able to allocate more budget on health it is suggested by high executive administrators in the MOPH to focus more investment in primary health care institutions compared to those at the secondary and tertiary levels [Tangcharoensathien *et al*. 2005]. Somehow, the suggestion seems not yet to have been taken into account and brought into practice effectively by decision makers and related policy implementers.

List of Abbreviations

CSMBS	Civil Servant Medical Benefit Scheme ระบบสวัสดิการการรักษาพยาบาลสำหรับข้าราชการ ลูกจ้าง หรือพนักงานของรัฐและรัฐวิสาหกิจ
CUP	Contracted Unit for Primary care หน่วยบริการปฐมภูมิ
DPHO	District Public Health Office สำนักงานสาธารณสุขอำเภอ
FPHU	Fundamental Public Health Unit หน่วยงานสาธารณสุขชุมชนมูลฐาน
GIS	Geographical Information System
HA	Hospital Accreditation
HC	Health Center สถานีอนามัย
IPD	Inpatient Department
KBKJ strategy	Klai Barn Klai Jai (health facility near dwelling) strategy ใกล้บ้านใกล้ใจ
LGO	Local Government Organization
MOPH	Ministry of Public Health
MWS	Medical Welfare Scheme ระบบสวัสดิการการรักษาพยาบาลสำหรับผู้มีรายได้น้อยหรือ ผู้ที่สังคมควรให้ความช่วยเหลือเกื้อกูล
NHSO	National Health Security Office สำนักงานหลักประกันสุขภาพแห่งชาติ
OPD	Outpatient Department
PCU	Primary Care Unit ศูนย์สุขภาพชุมชน
PHO	Public Health Officer เจ้าหน้าที่สาธารณสุขชุมชน (จพ.) หมออนามัย
PP	Health Promotion and Disease Prevention
PPHO	Provincial Public Health Office สำนักงานสาธารณสุขจังหวัด
PrHE	Private Health Expenditure
RDS	Rural Doctor Society กลุ่มแพทย์ชนบท
SLGO (TAO)	Sub-district Local Government Organisation or Tambon Administration Organisation องค์การบริหารส่วนตำบล (อบต.)
SNS strategy	Sarng Nam Sorm (Health promotion and prevention ahead curative health), สร้างนำซ่อม
SSO	Social Security Office สำนักงานประกันสังคม
SSS	Social Security Scheme โครงการประกันสังคม
TDRI	Thailand Development Research Institute สถาบันวิจัยเพื่อการพัฒนาประเทศไทย
UC	Universal health care Coverage โครงการหลักประกันสุขภาพถ้วนหน้า
VHCS	Voluntary Health Care Scheme โครงการบัตรประกันสุขภาพโดยสมัครใจ

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